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United States  
Department of  
Agriculture

Forest Service

Tongass  
National  
Forest  
R10-MB-258

September 1994



# Ushk Bay Timber Sale(s)

## Final Environmental Impact Statement

### Summary

Ushk Bay  
R10-MB-258  
September 1994





# Summary

## Overview of Project



*Sitka Black-tailed Deer*

In compliance with Federal and State regulations, the Forest Service has prepared this Final Environmental Impact Statement (Final EIS) for proposed timber harvest activities in the Ushk Bay Project Area. The National Environmental Policy Act (NEPA) requires that (1) a range of alternatives for achieving the project's goal be put forth, (2) an analysis of the environmental impacts of each alternative be conducted, (3) measures to mitigate adverse impacts be discussed, and finally, (4) the views of interested members of the public be sought and incorporated into the final plan. This Final EIS accomplishes those objectives. The process of achieving the final objective--seeking public interests and concerns--began with the issuance on May 8, 1992 of the Notice of Intent to conduct the environmental analysis. Public scoping was conducted during June and July in 1992 to define the issues to be addressed in the Draft EIS. After the Draft EIS was published, a 45-day public comment period was designated, ending July 26, 1993, during which written and verbal comments on the alternatives were sought. During this same time, subsistence hearings, as required by the Alaska National Interest Lands Conservation Act of 1980, were held in Sitka, Alaska to hear from those whose subsistence use of resources may be affected by proposed activities. The comment period was extended for 30 days and ended on August 25, 1993.

## Purpose and Need for Action

The purpose of this project is to consider specific alternatives for harvesting timber within the project area given the guidance in the Tongass Land Management Plan (TLMP), as amended (USDA Forest Service 1979, 1986a). The TLMP presently directs us to manage most of the Project Area for intensive resource use and development, with an emphasis on commodity resources. Furthermore, the TLMP specifically schedules timber sale preparation for the entire Project Area.

The proposed vegetation management and timber production within the Ushk Bay Project Area specifically addresses three identified needs. These are: 1) to implement Forest Plan direction for the Project Area; 2) to help meet market demand for timber in Southeast Alaska; and, 3) to move toward the desired future condition for the Project Area by harvesting mature stands of suitable timber and replacing them with faster growing, managed stands of second growth timber, capable of long-term timber production (USDA Forest Service 1979, 1991c). Additional direction, standards, and guidelines influencing the Ushk Bay Project are included in the Alaska Regional Guide and applicable Forest Service manuals and handbooks.

Analysis of the demand for timber volume through 1995, under terms of the revised long-term contract with Alaska Pulp Corporation (APC), indicated that between 55 and 100 million board feet of volume would need to be made available from the Ushk Bay Project Area in 1994. However, the April 14, 1994, contract termination decision ended APC contract volume obligations. In May, 1994, an independent sale program market assessment (Morse 1994) was completed. The assessment indicates that the Ushk Bay volume is still needed to contribute to the projected independent sale program (See Appendix O, Enclosure 1). The Ushk Bay Project was one of a series of timber harvest projects that were being considered within the APC contract boundary. These projects will now contribute to the independent sale program and the Ketchikan Pulp Company contract (See Appendix O, Enclosure 2).



## Summary

An evaluation was done on whether the change from a long-term timber sale contract offering to an independent timber sale, and other information that has become available since the DEIS, constituted significant new circumstance or information relevant to environmental concerns to warrant preparing a supplement to the DEIS. The determination was that a supplement to the DEIS was not needed before releasing the FEIS and ROD. The evaluation is included in FEIS Appendix L.

Based on the environmental analysis, the responsible official must decide whether or not and, if so, how to make timber available from the Ushk Bay Project Area in accordance with implementation of the TLMP. The decisions will include:

- The volume of timber to make available in this area in one or more timber sales
- The location of timber harvest units
- The location of arterial and collector road systems
- The location of log transfer facilities
- Mitigation measures and enhancement opportunities for sound resource management
- Whether there may be a significant restriction on subsistence uses

## Affected Area

The Project Area is located in southeastern Alaska at the southwest end of Chichagof Island, approximately 30 air miles north of Sitka (Figure S-1). The Project Area is bordered on the east by Peril Strait, on the west and south by the West Chichagof-Yakobi Wilderness, and on the north by a designated roadless area (Land Use Designation II). The Project Area encompasses the following Value Comparison Units (VCUs) described in the TLMP: VCUs 279, 280, and 281 (Figure S-2). Two Management Areas are a part of the Ushk Bay Project Area. Management Area C-39 covers the majority of the Project Area, incorporating all of VCUs 280 and 281. Management Area C-40 consists of eleven VCUs, but only VCU 279 lies within the Project Area.

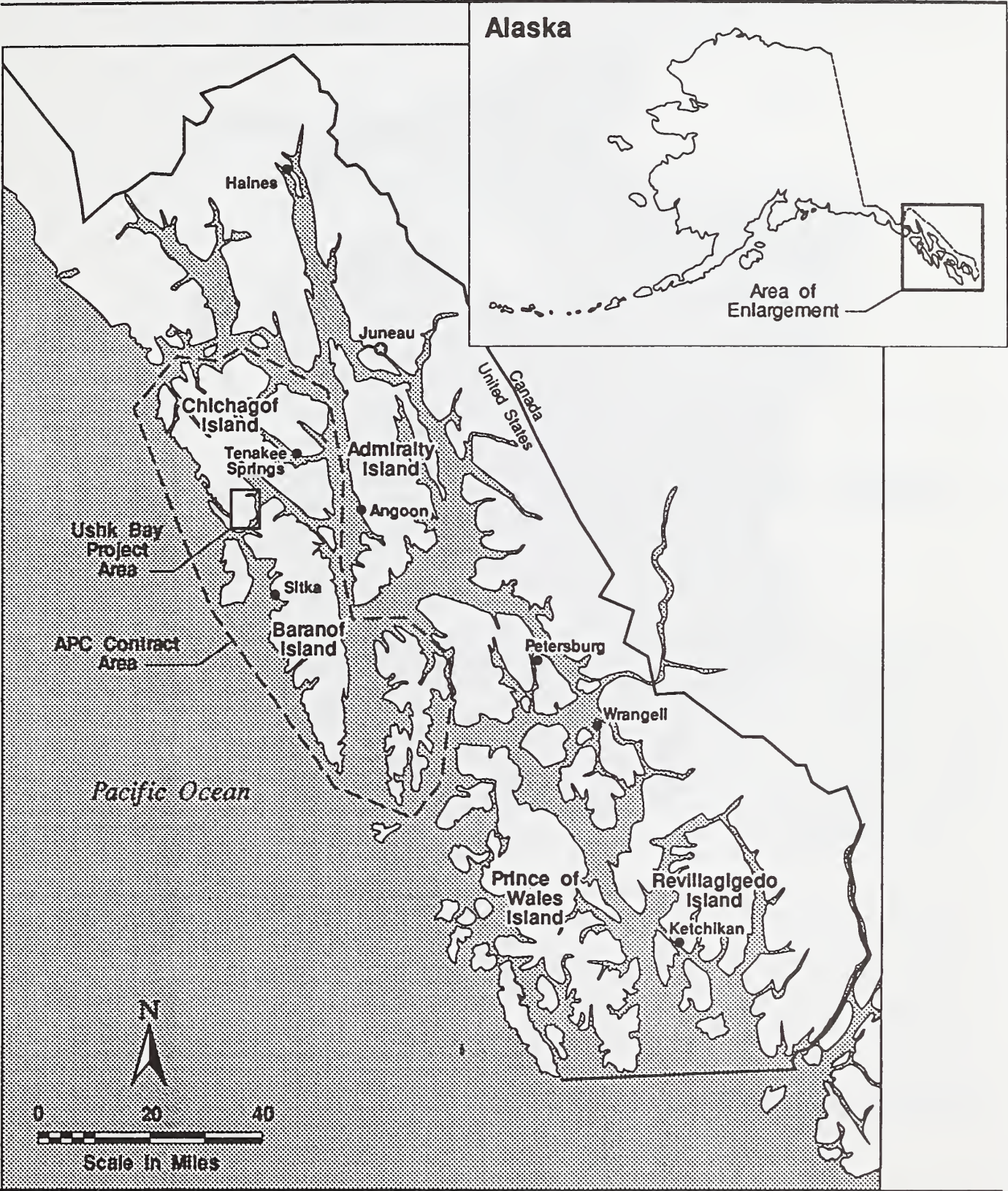
## Availability of Documents

Documents upon which this Final EIS was based, as well as files and planning records which are incorporated by reference into the Final EIS, are available for review during regular business hours at the Forest Service, Tongass National Forest, Chatham Area, 204 Siginaka Way, Sitka, Alaska. A limited number of the Final EIS are available upon request.

## Background

In 1956, the Forest Service entered into a contract with the Alaska Lumber and Pulp Company (later renamed Alaska Pulp Corporation) for the sale and logging of timber in Southeast Alaska for a 50-year period beginning in 1961 and ending in 2011. During this period, the contract provided for the harvest of 4,974,700,000 board feet of timber within the contract area, which included parts of Baranof, Chichagof, Kuiu, and associated islands. On September 30, 1993, APC suspended operation of its Sitka pulp mill. Among other reasons cited for the indefinite shutdown were the prolonged periods of poor markets, increasing production costs, and a shortfall in the amount of timber available at an affordable price. As a result of this shutdown, the Forest Service on April 14, 1994, officially terminated the Long-term Timber Sale Contract with APC. Termination of the APC contract shifted the focus for making timber volume available from the Ushk Bay Project Area from long-term timber sale contract offerings to competitive independent timber sales.

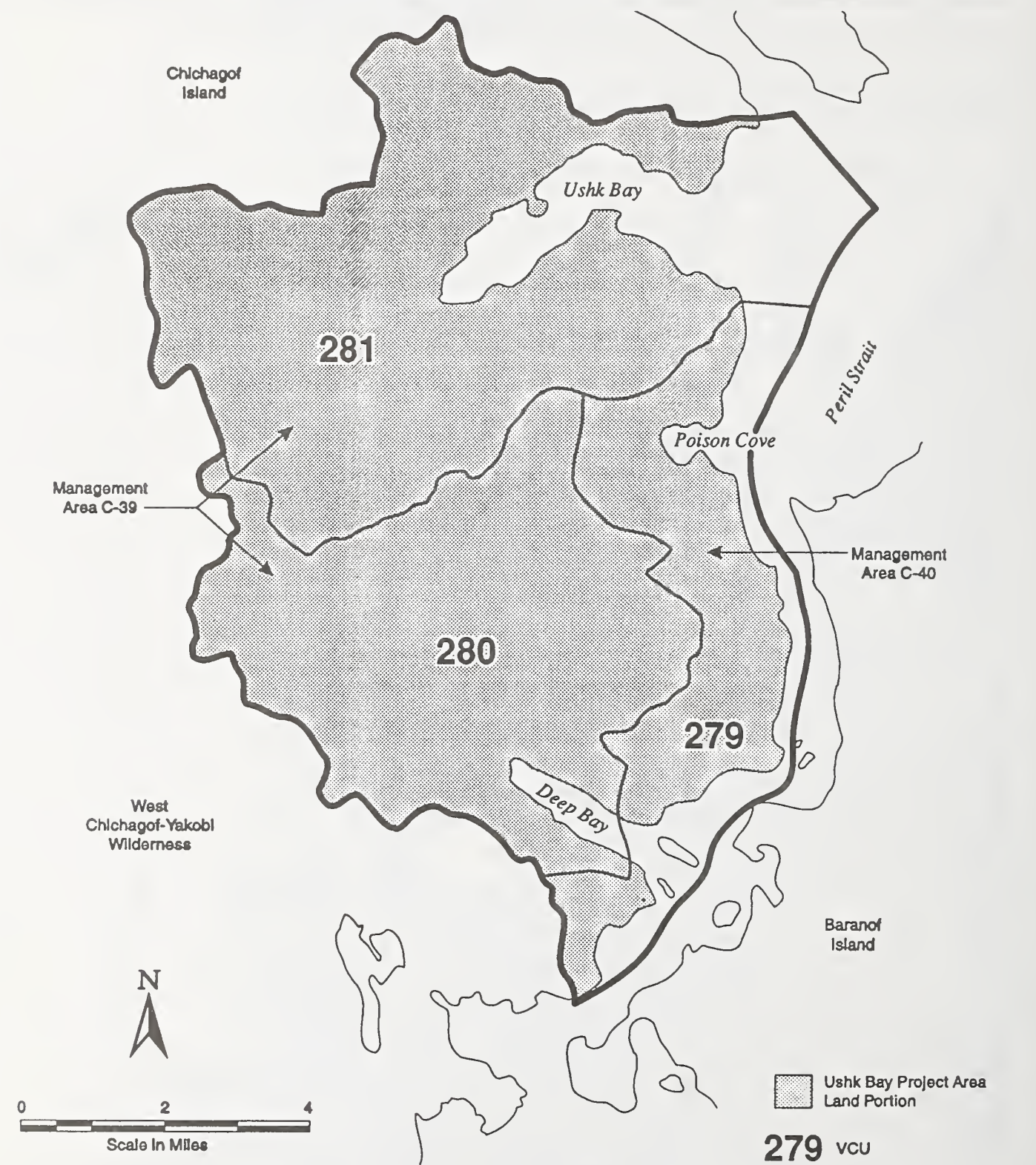
Figure S-1  
Vicinity Map





# Summary

Figure S-2  
Ushk Bay Project Area





An independent sale program market assessment was done in May, 1994 (See Appendix O, Enclosure 1) that affirmed market demand for timber volume in Southeast Alaska irrespective of the APC contract. This recent market assessment, in the wake of termination of the APC contract, resulted in the environmental analysis for the Ushk Bay Project Area continuing, but without the APC contract being the vehicle for making volume available from the Project Area.

## Issues

As a result of public scoping meetings and consultation with municipal, State, and Federal agencies, the following issues were identified as requiring analysis in the Draft EIS:

- **Issue No. 1:** How will the proposed timber harvest and road construction activities affect subsistence uses?
- **Issue No. 2:** How will the timber harvest and road construction activities affect recreation and visual resources?
- **Issue No. 3:** What effects will timber harvest and road construction have on the Native allotment land claim at Deep Bay?
- **Issue No. 4:** What would be the socioeconomic effects of logging and associated development on Southeast Alaska residents?
- **Issue No. 5:** How will timber harvest and road building activities affect wildlife habitat?
- **Issue No. 6:** How would timber harvest, road building activities, and LTFs affect fish and shellfish habitat?

## Development of Alternatives

The alternative formulation process has been guided by several concepts and principles of sound resource management. Each alternative follows the standards, guidelines, and direction contained in the TLMP, the Alaska Regional Guide, and applicable Forest Service manuals and handbooks, which are based on long-standing forest management principles. The alternatives also meet the requirements of the Tongass Timber Reform Act (TTRA) and are evaluated using the mid-market appraisal test. Ecosystem management is another concept incorporated into forest management in recent years. A central guiding concept of ecosystem management is using silvicultural strategies to bring about a different way of managing our National Forests. The philosophy is to emphasize ecological, physical, and social sciences to guide resource management to sustain the health, productivity, and intangible values of the land.

The ecosystem management approach addresses forest management on two levels: (1) the landscape level, which considers effects of management practices over large areas, such as a watershed, a viewshed, or a VCU; and (2) the stand level, which deals with individual harvest units. Practices employed at the landscape level may include maintaining large tracts of undisturbed old-growth forest by concentrating timber harvest in certain areas, using beach fringe and stream buffers for corridors between old-growth blocks, and designing harvest units to “fit” into the landscape. Stand-level practices may include reducing harsh edges by unit placement and feathering of cutting-unit edges, and providing for stand diversity by leaving snags or retaining small patches of uncut timber, where feasible and practical. These concepts were considered in the selection and design of individual harvest units and roads that became part of the alternatives.

## Summary

### Summary of Alternatives

Six alternatives were developed based on public issues: five action alternatives and one no-action proposal against which the others are measured. Table S-1 shows the volume of timber by millions of board feet and acres to be harvested under each action alternative.

Table S-1

#### Components of Action Alternatives

	<i>B</i>	<i>C</i>	Alternative		
			<i>D</i>	<i>E</i>	<i>F</i>
Harvest Acres	1,670	3,096	1,430	2,783	1,898
Volume (MMBF)	50.6	84.8	46.5	90.3	62.4
Road Miles	36.2	62.3	49.5	64.6	47.0
Camp	Ushk	Ushk	Ushk	Poison Cove	Poison Cove
LTF(s)	2	4	3	3	1

#### Alternative A: No-Action

This alternative represents the “No-Action” Alternative as required under the National Environmental Policy Act of 1969 (NEPA). Selection of this alternative would require timber to be made available from another area to meet contract requirements. Alternative A serves as a benchmark by which effects of all action alternatives are measured. In this alternative, no roads or LTFs would be built in the Project Area. Existing log storage activities in Poison Cove would continue.

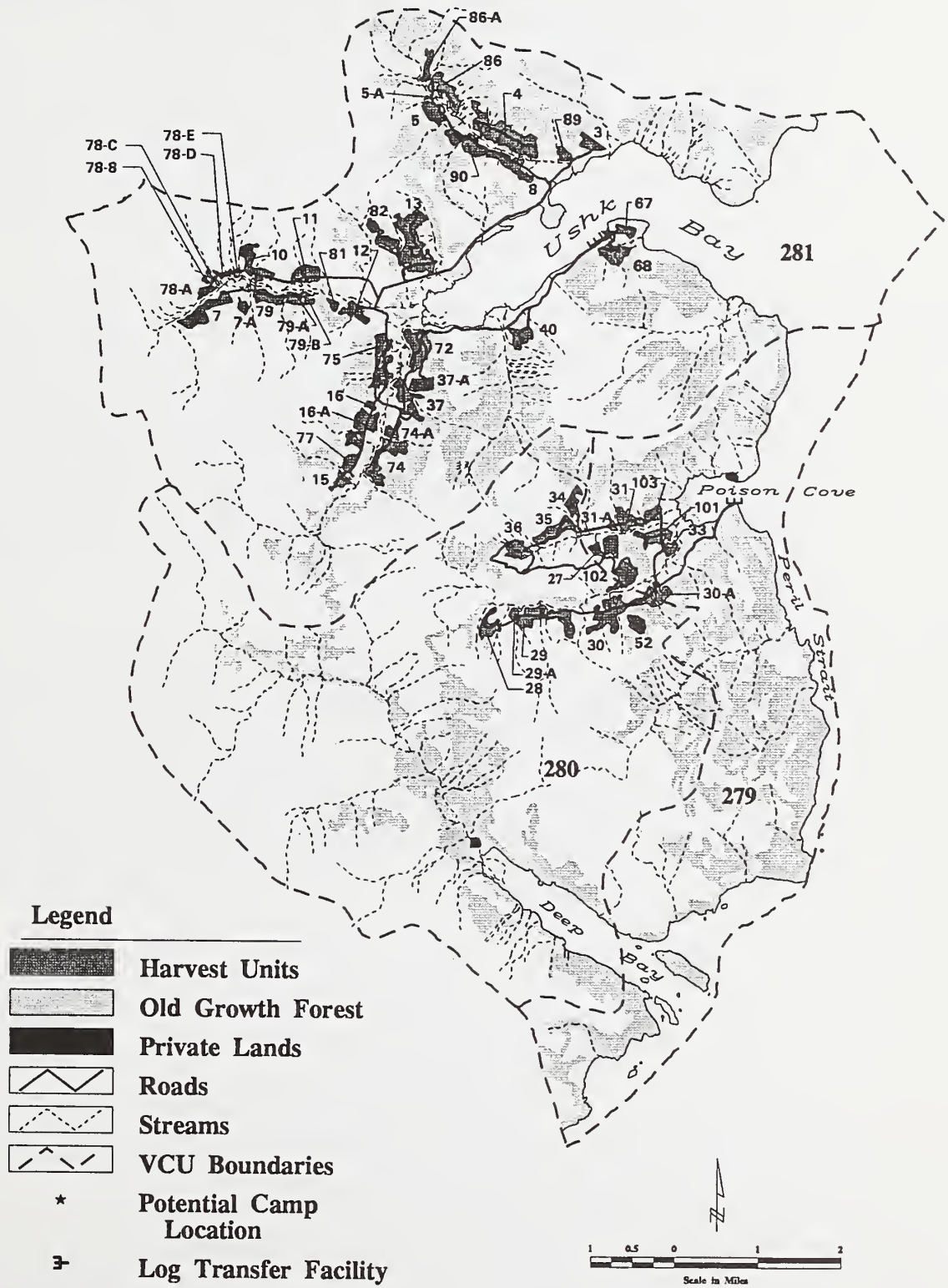
#### Alternative B

This alternative would consolidate timber harvest in the vicinity of Ushk Bay and Poison Cove (Figure S-3). No harvest of timber would occur near Deep Bay or along Peril Strait. Under this alternative, 1,670 acres would be scheduled for harvest in 54 harvest units for approximately 50.6 MMBF of sawlog and utility volume. The average harvest unit size would be 31 acres. Two harvest units would be larger than 100 acres. To implement this level of harvest, 36 miles of new road would be constructed. This is an average of 1.5 MMBF per mile of new road construction. Two LTFs would be required by this alternative: one at Poison Cove and one at Ushk Bay. No road connection between the LTFs is planned. Roads would be closed to traffic after the timber harvest is completed. There would be a land camp at Ushk Bay which would require either a second camp at Poison Cove, or more likely, would require workers to commute by boat between the Ushk Bay camp and the LTF in Poison Cove.

#### Alternative C

This alternative would allow the harvest of the same units as Alternative B plus the addition of areas south of Poison Cove and in the Deep Bay watershed (Figure S-4). Group-selection harvest would be added in some of the visually sensitive areas along Peril Strait. The groups would be 2 acres or less in size and about 25 percent of the timber within the unit boundaries would be harvested. With this alternative, 3,096 acres would be harvested in 84 harvest units for approximately 84.8 MMBF of sawlog and utility volume. The average unit size would be 30 acres. Two harvest units would be larger than 100 acres. To implement this level of harvest, 62 miles of new road would be constructed. This indicates an average of 1.4 MMBF per mile of new road construction. A total of four LTFs would be required. The LTFs would be located at Deep Bay, Goal Creek, Poison Cove, and Ushk Bay. The road system would not be connected between the LTFs. Roads would be maintained after harvest to provide recreational access by truck or off-road vehicles. A floating camp would be located in Ushk Bay. Docks, equipment storage, and service areas would be constructed at the LTFs in Deep Bay and Poison Cove.

Figure S-3  
Alternative B





## Summary

### Alternative D

This alternative would disperse the harvest units so as to facilitate a second harvest within the 100-year rotation and create areas of different forest age classes within the Project Area (Figure S-5). This alternative would have higher first-entry costs but would provide an opportunity for a more economical second entry, thus dispersing the harvest temporally and geographically. The second entry would occur in approximately 50 years when the timber within the harvested units would be large enough to allow a commercial thinning.

Implementation of this alternative would schedule harvest of 1,430 acres in 46 harvest units for approximately 46.5 MMBF of sawlog and utility volume. The average unit size would be 31 acres. No harvest units would be larger than 100 acres. To implement this level of harvest, 49 miles of road would be constructed. This indicates an average of 1.0 MMBF per mile of new road construction. Three LTFs would be required by this alternative. The LTFs would be located at Ushk Bay, Poison Cove, and Deep Bay. The road system would be interconnected between the LTFs, and would be maintained after harvest for motorized recreation. A land-based camp would be located at Ushk Bay.

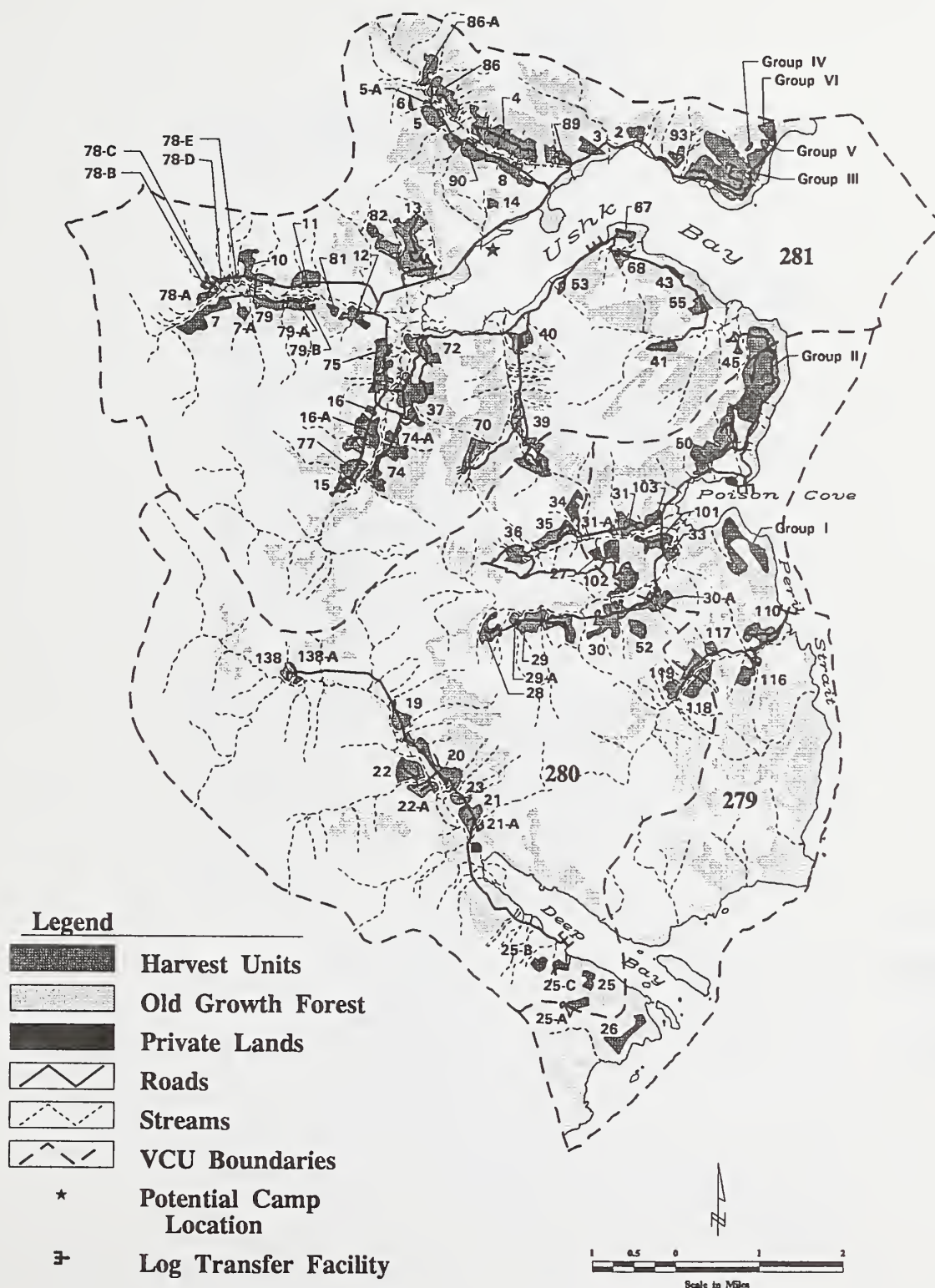
### Alternative E

This alternative would maximize the availability of timber volume throughout the Project Area (Figure S-6). Implementation of this alternative would schedule harvest of 2,783 acres in 93 harvest units for approximately 90.3 MMBF of sawlog and utility volume. The average unit size would be 30 acres. Two harvest units would be larger than 100 acres. To implement this level of harvest, 65 miles of new road would be constructed. This indicates an average of 1.5 MMBF per mile of new road construction. Three LTFs would be required by this alternative. The LTFs would be located at Ushk Bay, Poison Cove, and Goal Creek. There would be a road connection over the pass between Ushk Bay and Deep Bay to allow logs to be hauled to the Ushk Bay LTF. The LTF at Poison Cove would not be connected by road to either Ushk Bay or Deep Bay. The road system would be closed following timber harvest. A land-based camp would be located at Poison Cove.

### Alternative F

This alternative would minimize timber harvest and LTFs in the visually sensitive areas along Peril Strait but would otherwise tend to maximize available timber volume (Figure S-7). Implementation of this alternative would schedule harvest of 1,898 acres in 58 harvest units for approximately 62.4 MMBF of sawlog and utility volume. The average unit size would be 33 acres. Two harvest units would be larger than 100 acres. To implement this level of harvest, 47 miles of new road would be constructed. This indicates an average of 1.4 MMBF per mile of road. One LTF would be located at Poison Cove. The road system would be connected between Ushk Bay, Poison Cove, and Deep Bay to allow logs to be hauled to the Poison Cove LTF. The road system would be closed following timber harvest. A land-based camp would also be located at Poison Cove.

Figure S-4  
Alternative C



# Summary

Figure S-5  
Alternative D

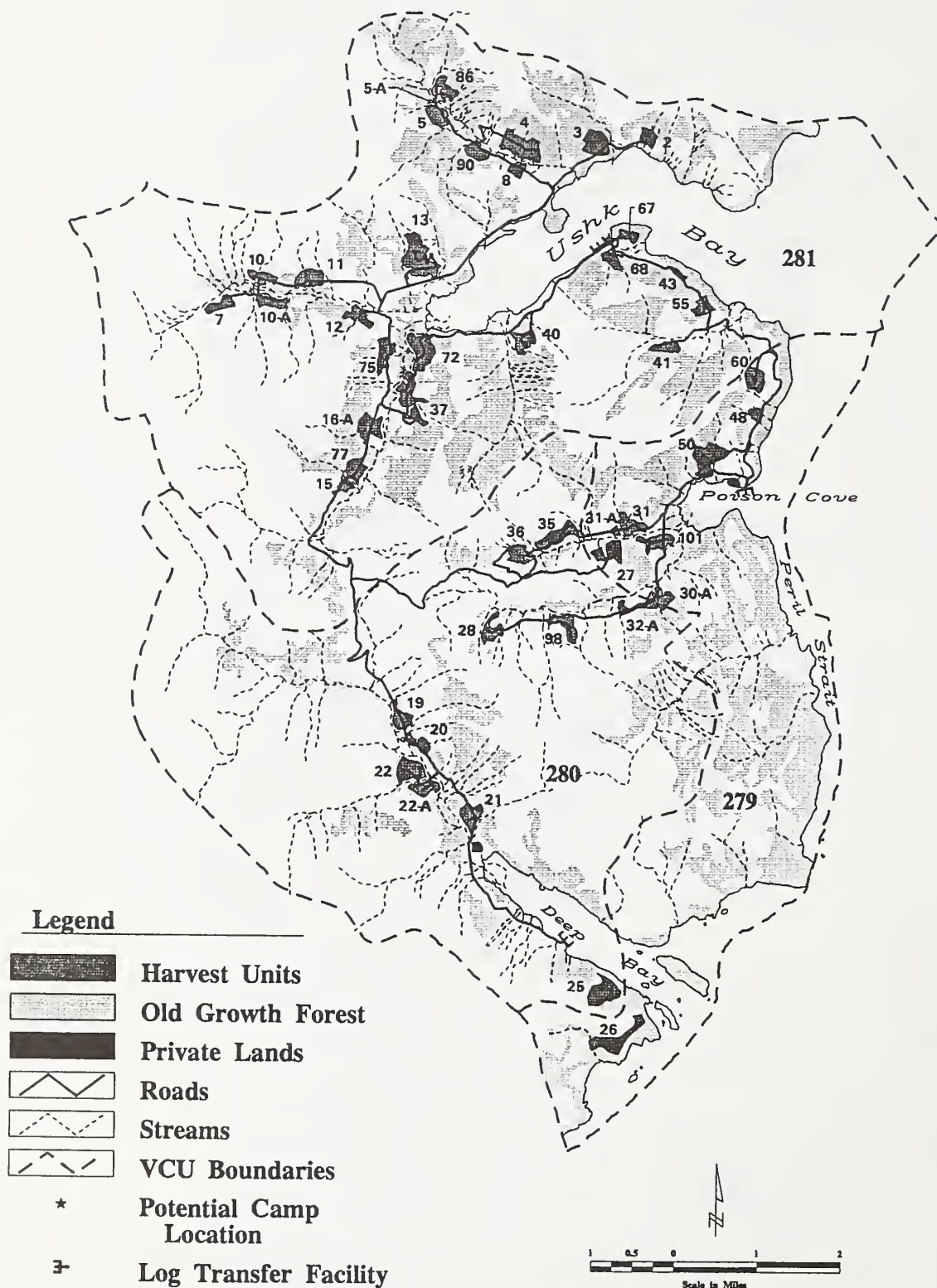
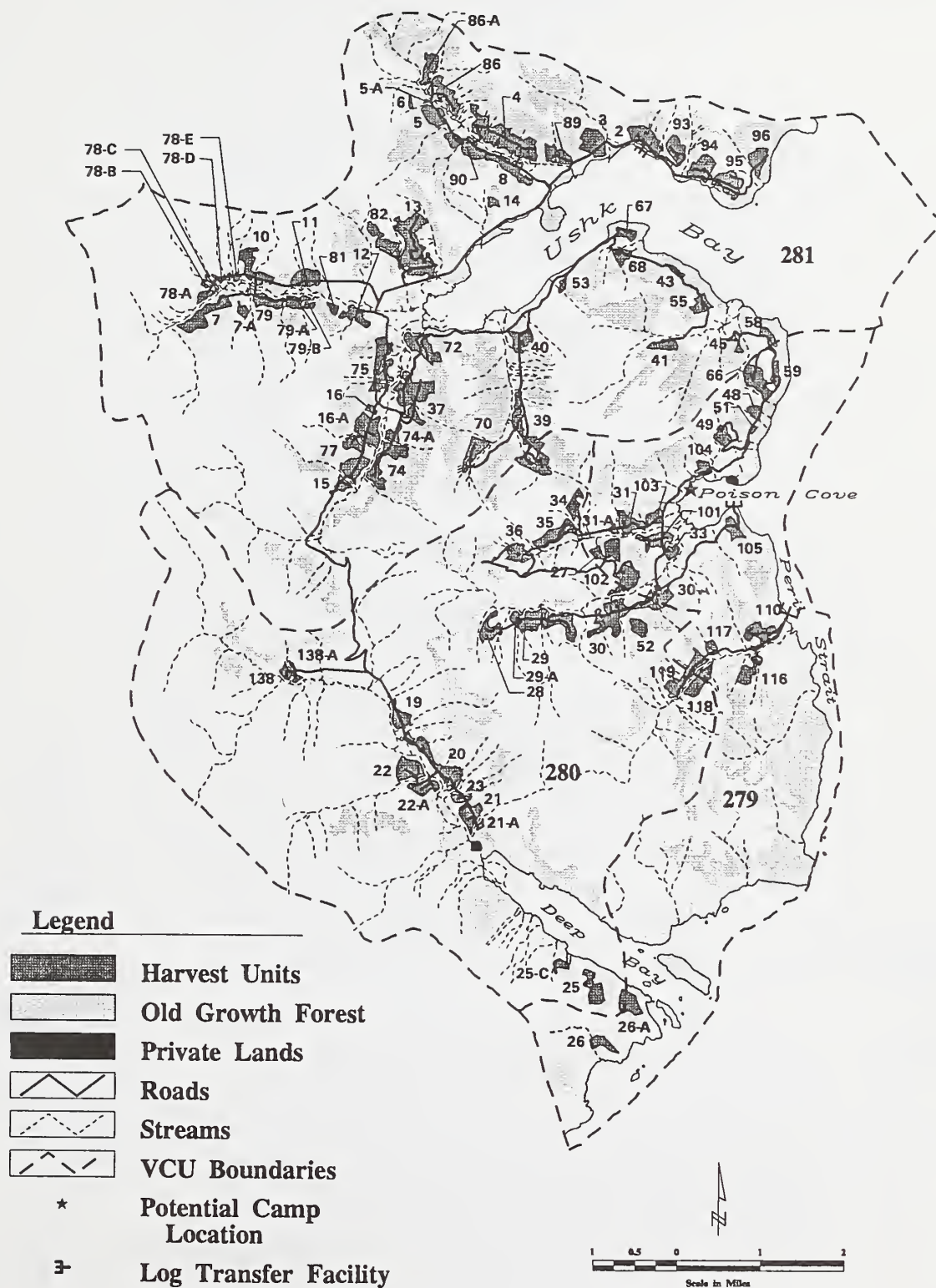


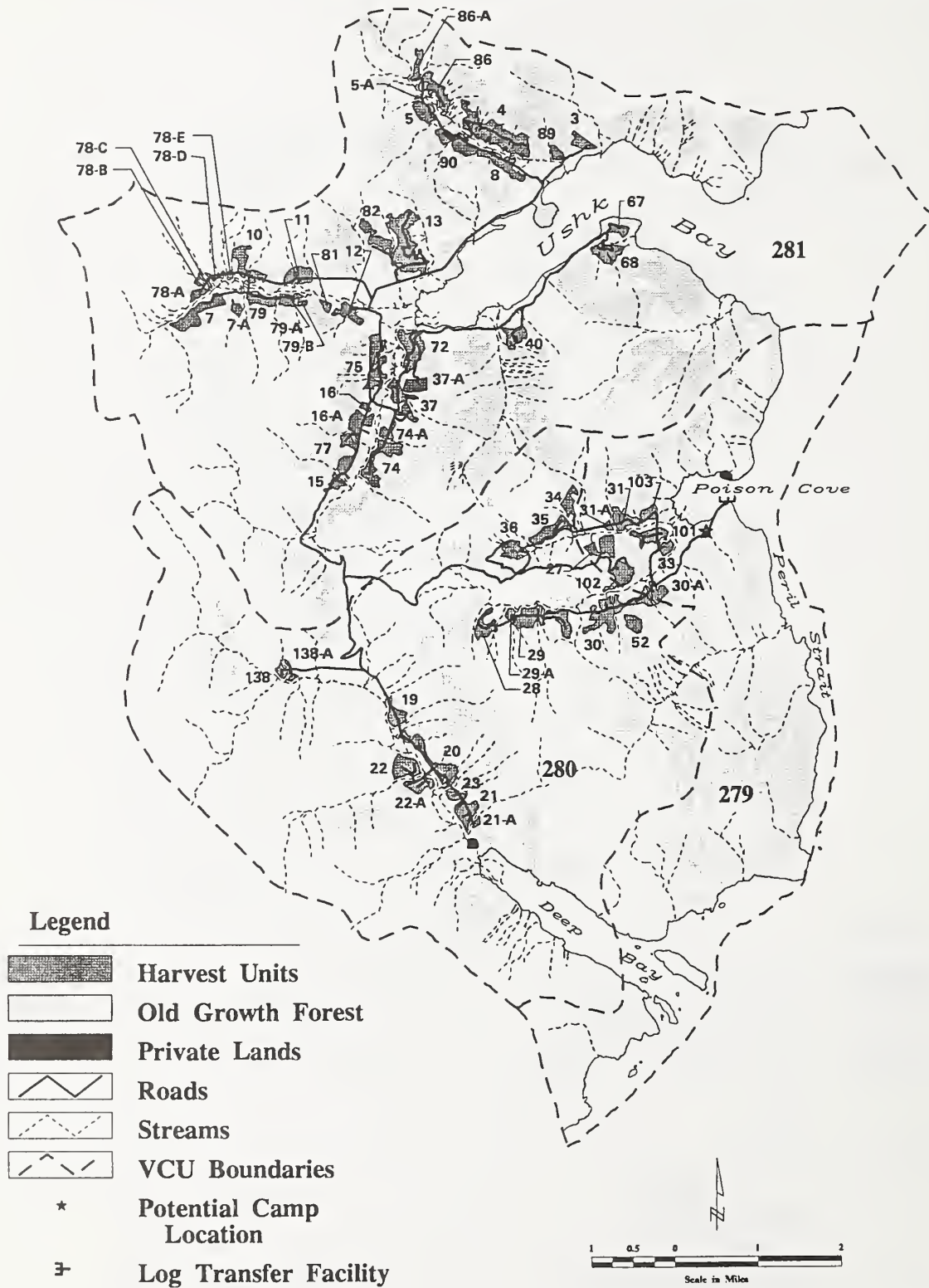


Figure S-6  
Alternative E



# Summary

Figure S-7  
Alternative F



## Comparison of Alternatives

The comparison of alternatives draws together the conclusions from the materials presented throughout the Final EIS and provides the results of the analysis in summary form. The following sections compare alternatives by (1) identified issue; (2) proposed activity; and (3) environmental consequence.

### Issues

#### Issue 1: How will the proposed timber harvest and road construction activities affect subsistence uses?

Based on potential direct and cumulative effects of timber harvest, there is a significant possibility of a significant restriction of subsistence use of deer in the Project Area under all alternatives, including the No-Action Alternative. There may also be a significant possibility of a significant restriction of subsistence use of fish and shellfish under Alternatives B through E. The proposed alternatives do not present a similar significant possibility of significantly restricting other subsistence uses.

Subsistence hearings were held in accordance with ANILCA Section 810. These hearings gave subsistence users an opportunity to testify on their subsistence use within the Project Area and their perceptions of probable impacts to those uses from the proposed alternatives. A transcript of the subsistence testimony is incorporated into the Final EIS in Appendix L.

#### Issue 2: How will the timber harvest and road construction activities affect recreation and visual resources?

##### Recreation

Under all alternatives, the Ushk Bay Project Area has the potential to provide a wide range of recreation opportunities, activities, settings, and experiences. The change in recreation setting because of timber harvest and road construction activities may affect the recreational experience and, therefore, overall satisfaction of the forest visitor. Visitors seeking a Primitive or Semiprimitive recreational experience may not be satisfied in an area with active timber management activities. On the other hand, visitors who do not require a natural setting for their recreation activities may not be thus affected.

Table S-2 displays the percent of the various Recreation Opportunity Spectrum (ROS) classes in the Project Area following implementation of each alternative. Alternative A would result in no change to the current ROS classifications. This alternative provides a baseline for comparing the effects of the alternatives on the recreation resources. In all action alternatives, the acres of Primitive settings would be reduced, while the Semiprimitive Nonmotorized and Roaded Modified acres would increase. The greatest changes from the existing situation would occur in Alternatives C and E. These changes would have a negative effect on those individuals seeking nonmotorized recreational experience, and would have a positive impact on those desiring a more modified setting for their activities.

##### Visual Resources

Table S-3 displays the visual quality resulting from the implementation of the project's alternatives. An increase in Maximum Modification acreage in an alternative indicates a negative effect on the visual resource. The increase of Maximum Modification acreage represents a slight to minor level of change to the visual resources within the Project Area for all action alternatives. Alternative C displays the greatest increase in Maximum Modification acreage. With Alternative A, the existing visual condition remains unchanged. However, each action alternative concentrates or disperses activities in different areas within the Project Area; thus, the impact to specific watersheds would vary. Following is a summary of visual impacts by action alternative.





## Summary

Table S-2

### Percent of Project Area in Each ROS Class

ROS Class	A <sup>1</sup>	B	Alternative			
			C	D	E	F
Primitive	75	8	0	0	0	0
Semiprimitive Nonmotorized	13	60	47	61	45	59
Semiprimitive Motorized	12	8	3	6	5	9
Roaded Natural	0	0	5	0	5	0
Roaded Modified	0	24	45	33	45	32
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

1 Alternative A, the No Action Alternative, represents the existing ROS inventory.

Source: Gault and Howell, 1993

Table S-3

### Visual Quality Acreage of Project Area by Alternative

VQO	A	B	Alternatives			
			C	D	E	F
Retention	3,776	3,774	3,666	3,706	3,694	3,774
Partial Retention	24,051	22,941	21,715	23,061	22,125	22,940
Modification	12,385	11,744	11,556	11,991	11,537	11,729
Maximum Modification	4,291	6,044	7,566	5,745	7,147	6,060

Source: Gault, 1993

Alternative B would have the lowest overall visual impacts. Harvest units would be consolidated in Ushk Bay and Poison Cove and not directly facing Peril Strait. Only harvest units west of Poison Cove would be visible from Peril Strait. Harvest units in Ushk Bay would be visible from small recreational boats that enter the bay.

Alternative C would have one of the largest visual impacts. Harvest units would be located on slopes above Peril Strait and in the Goal Creek Drainage. Most of the harvest along Peril Strait would be by group selection. Group selection harvest would only be a slight improvement in overall visual effect as compared with harvesting the entire area.

Alternative D would have higher visual impacts than Alternatives B and F but lower impacts than Alternatives C and E. Harvest units would be widely spaced and dispersed throughout the Project Area. Several harvest units and roads would cause high visual impacts to views from the ferry route and small boaters in Peril Strait and Ushk Bay.

Alternative E would have the greatest overall effect on visual resources. This alternative proposes the largest number of harvest units dispersed in consolidated groups throughout the Project Area, including the slopes above Peril Strait.

Alternative F would have similar visual impacts to Alternative B. Harvest units would be consolidated mainly in the large drainages of Ushk Bay, Poison Cove, and Deep Bay. Only a few of the harvest units at Poison Cove would be visible from Peril Strait. Harvest units in Ushk Bay would be visible from small recreational boats entering the bay.

## Issue 3: What effects will timber harvest and road construction have on the Native allotment land claim at Deep Bay?

Alternatives B, E, and F would have no direct impacts on Native allotment claims for land parcels within the Ushk Bay Project Area. In Alternatives C and D, a proposed road on the south shore of Deep Bay would traverse land claimed under a Native allotment. Although no harvest units are planned for this area, the Native allotment land claim would be directly affected by construction and transportation activities associated with both Alternatives C and D. No harvest units or roads are planned in the area near Deep Bay under Alternative B.

## Issue 4: What would be the economic and social effects of logging and associated development on Southeast Alaska residents?

Table S-4 displays the employment (jobs), employee compensation (personal income), and contribution to gross regional product associated with each alternative. The jobs and income listed include those both directly and indirectly dependent on the timber industry. The volume of timber harvested for each alternative results in a level of jobs and salaries associated with that volume. Employment and personal income are based on the Forest Service economic model, IMPLAN. Alternative E would have the largest regional economic impact because it would produce more timber than any of the other four action alternatives.

Table S-4

### Timber Industry Employment and Income

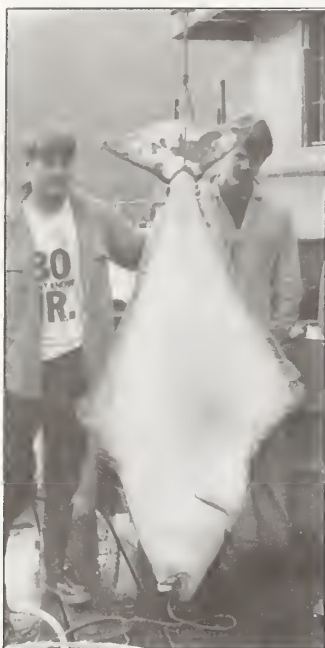
	Alternative					
	A	B	C	D	E	F
Employment (number of jobs)	0	290	478	299	509	359
Employee compensation (millions \$)	0	10.23	16.88	10.29	17.97	12.51
Contribution to Gross Regional Product (millions \$)	0	15.53	25.61	15.78	27.28	19.05

Source: Assam and Mott, 1993

Loading Log Truck at Landing



## Summary



*Halibut Occur in the Project Area*

### Issue 5: How will timber harvest and road building activities affect wildlife habitat?

Table S-5 displays the acres proposed for harvest in each of the six major wildlife habitats. A direct effect on wildlife habitats from all action alternatives would be loss of old-growth forest and change of forest habitat. Impacts to beach fringe, estuary fringe, riparian, and alpine habitats were greatly reduced through unit and road design prior to alternative formulation. Alternative A would have no effect on wildlife habitats. Alternatives C and E would have the greatest direct impact on old-growth forest, riparian, beach fringe, and estuary fringe habitat. Alternative D would have the least direct impact on old-growth forest and riparian habitat. Alternatives B and F would have the least direct impact on beach fringe and estuary fringe habitat.

Table S-5

#### Wildlife Habitats (in acres) Proposed for Harvest or Roads

Habitat	Alternative					
	A	B	C	D	E	F
Old-growth Forest	0	1,703	3,203	1,503	2,857	1,941
Forest	0	1,714	3,216	1,516	2,870	1,952
Riparian	0	570	962	539	977	751
Beach Fringe	0	35	79	54	86	35
Estuary Fringe	0	84	180	135	184	84
Alpine	0	0	0	0	0	0

Source: Artman, 1993

Note: Because habitat types overlap, the total acreage of habitat types exceeds the total acreage of the Ushk Bay Project Area.

Table S-6 displays the potential reduction in wildlife habitat capabilities for six Management Indicator Species found in the Ushk Bay Project Area, as calculated by GIS computer models. This table displays the estimated habitat capability in 1992 and the estimated reduction in this capability after the proposed actions are implemented. Habitat capability does not necessarily indicate current or future populations, but rather is a means to estimate and compare effects. All of the action alternatives would decrease habitat capabilities by 14 percent or less for Sitka black-tailed deer, 9 percent or less for brown bear, 14 percent or less for marten, 21 percent or less for river otter, 17 percent or less for hairy woodpecker, and 18 percent or less for brown creeper. Alternatives C and E would result in the greatest reductions in habitat capability for deer, brown bear, marten, and otter because the most old-growth forest would be harvested under these alternatives. Alternative A would maintain the current capabilities for the Management Indicator Species.



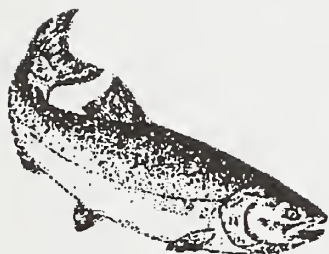


Table S-6

**Potential Reduction in Habitat Capability for Management Indicator Species**

Species	1992 Habitat Capability	Reduction in Habitat Capability, by Alternative					
		A	B	C	D	E	F
Sitka Black-tailed Deer	1,385	0	-104	-180	-96	-190	-118
Brown Bear	58	0	-3	-5	-3	-5	-4
Marten	63	0	-5	-8	-4	-8	-5
River Otter	37	0	-5	-8	-5	-8	-7
Hairy Woodpecker	276	0	-26	-48	-23	-43	-29
Brown Creeper	89	0	-9	-16	-8	-15	-9

Source: Artman, 1993

**Issue 6: How would timber harvest, road building activities, and LTFs affect fish and shellfish habitat?**

Potential effects on fish would be minimal for all alternatives. All alternatives meet the requirements of the Clean Water Act. Implementation of the TTRA's requirement to provide a minimum 100-foot buffer on Class I streams and Class II streams flowing directly into Class I streams will minimize direct stream channel impacts from proposed timber harvest and road construction. Adherence to Best Management Practices (BMPs) outlined in the Soil and Water Conservation Handbook during the design of harvest units and roads will minimize the potential direct and indirect effects to fish habitat. Site-specific BMPs were developed and selected to further minimize the potential for impact to fish habitat.

The effects of timber harvest and road construction on shellfish populations would also be minimal for all the alternatives. Application of the siting guidelines developed by the Alaska Timber Task Force will minimize the potential effects of LTFs on shellfish populations. The short period of use and relatively small amount of logs that will go through the LTFs will also minimize bark accumulation. Additionally, construction of from one to four LTFs will affect so little of the available marine habitat that short-term and long-term effects on the marine ecosystem will be minimal as a result of LTF use.

## Summary

### Proposed Activity

Table S-7 compares the alternatives by proposed activity.

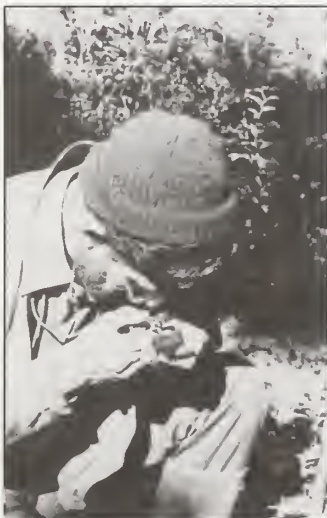
### Environmental Consequences

Summaries of the environmental consequences of each alternative are compared in Table S-8.

Table S-7

#### Comparison of Alternatives by Proposed Activity

	Alternative					
	A	B	C	D	E	F
<b>Volume in Net Sawlog Plus Utility (MMBF)</b>	0	50.6	84.8	46.5	90.3	62.4
<b>Transportation System</b>						
Number of LTFs	0	2	4	3	3	1
Miles of Road	0	36	62	49	65	47
Number of Stream Crossings	0	84	159	124	163	115
Acres of Road Clearing	0	217	374	297	388	281
Roads Interconnected	None	No	No	Yes	Yes	Yes
Road System Management Objective	None	Closed	Open	Open	Closed	Closed
<b>Harvest Units</b>						
Number of Clearcut Units	0	54	84	46	93	58
Number of Group Selection Units	0	0	6	0	0	0
Average Size (acres)	0	31	30	31	30	33
Number over 100 acres	0	2	2	None	2	2
Number over 150 acres	None	None	None	None	None	None
<b>Logging Systems</b>						
Acres High Lead	0	70	183	87	197	133
Acres Shovel Logging	0	128	264	171	287	215
Acres Skyline Systems	0	1,295	1,780	1,064	2,022	1,372
Acres Helicopter	0	178	869	108	273	178
Total Acres	0	1,670	3,096	1,430	2,783	1,898
<b>Camp</b>						
Type	None	Land	Float	Land	Land	Land
Location	None	Ushk	Ushk	Ushk	Poison	Poison



Monitoring Would Occur Under All Action Alternatives

Table S-8

**Comparison of Environmental Consequences**

Environmental Consequence	Alternative					
	A	B	C	D	E	F
<b>Forest Vegetation</b>						
% of Forest Vegetation in Each Successional Stage						
Seedling/Sapling	0	10	20	9	17	12
Pole/Young Sawtimber	2	2	2	2	2	2
Mature Sawtimber	0	0	0	0	0	0
Old Growth	98	88	78	89	81	86
Level of Change	None	Minor	Minor	Minor	Minor	Minor
<b>Wetlands</b>						
% of Wetland Acreage Affected						
Affected	0	3	5	2	4	3
Level of Change	None	Slight	Slight	Slight	Slight	Slight
<b>Wildlife Habitats</b>						
% of Habitats Affected						
Old-growth Forest	0	11	20	9	18	12
Level of Change	None	Minor	Minor	Minor	Minor	Minor
Riparian	0	12	19	11	20	15
Level of Change	None	Minor	Minor	Minor	Minor	Minor
Beach Fringe	0	2	3	4	4	2
Level of Change	None	Slight	Slight	Slight	Slight	Slight
Estuary Fringe	0	4	8	6	8	4
Level of Change	None	Slight	Minor	Minor	Minor	Slight
Alpine	0	0	0	0	0	0
Level of Change	None	None	None	None	None	None
<b>Wildlife Habitat Capability</b>						
% Reduction of Habitat Capability						
Sitka Black-tailed Deer	0	8	13	7	14	9
Level of Change	None	Minor	Minor	Minor	Minor	Minor
Brown Bear	0	5	9	5	9	7
Level of Change	None	Slight	Minor	Slight	Minor	Minor
Marten	0	9	14	7	14	9
Level of Change	None	Minor	Minor	Minor	Minor	Minor
River Otter	0	15	21	15	21	18
Level of Change	None	Minor	Moderate	Minor	Moderate	Minor
Hairy Woodpecker	0	9	17	8	16	11
Level of Change	Minor	Minor	Minor	Minor	Minor	Minor
Brown Creeper	0	11	18	9	17	11
Level of Change	Minor	Minor	Minor	Minor	Minor	Minor



## Summary

Table S-8 (continued)

### Comparison of Environmental Consequences by Alternative

Environmental Consequence	Alternative					
	A	B	C	D	E	F
<b>Biological Diversity</b>						
<b>Fragmentation</b>						
Reduction in Old-growth Forest Patches 500-1,000 Acres in Size (%)	0	4	14	3	15	4
Level of Change		Slight	Minor	Slight	Minor	Slight
Reduction in Old-growth Forest Patches >1,000 Acres in Size (%)	0	44	60	40	50	56
Level of Change		Substantial	Substantial	Substantial	Substantial	Substantial
<b>Watershed and Fish</b>						
Ratio of Road Miles per Watershed Area (mi./mi. <sup>2</sup> )	0	4.4	4.1	3.9	4.0	3.7
Ratio of Harvest Area to Watershed Area (in acres)	0	0.3	0.4	0.2	0.3	0.2
Sensitivity Rating	0	1.5	2.4	1.3	2.1	1.5
Level of Change	None	Slight	Slight	Slight	Slight	Slight
<b>Marine</b>						
<b>Log Transfer Facilities</b>						
Intertidal Habitat Affected (%)	0	<1	<1	<1	<1	<1
Level of Change	None	Slight	Slight	Slight	Slight	Slight
Subtidal Habitat Affected (%)	0	0.16	0.32	0.24	0.24	0.08
Level of Change	None	Slight	Slight	Slight	Slight	Slight
<b>Rafting Areas<sup>1</sup></b>						
Intertidal Habitat Affected (%)	<1	<1	<1	<1	<1	<1
Level of Change	None	None	None	None	None	None
Subtidal Habitat Affected (%)	0	<1	<1	<1	<1	<1
Level of Change	None	Slight	Slight	Slight	Slight	Slight

Table S-8 (continued)

**Comparison of Environmental Consequences**

Environmental Consequence	Alternative					
	A	B	C	D	E	F
<b>Recreation</b>						
Change in Acres of ROS (%)						
Primitive	0	-67	-75	-75	-75	-75
Semiprimitive Nonmotorized	0	+47	+34	+48	+32	+46
Semiprimitive Motorized	0	-4	-9	-6	-7	-3
Roaded Natural	0	0	+5	0	+5	0
Roaded Modified	0	+24	+45	+33	+45	+32
Level of Change	None	Moderate	Substantial	Substantial	Substantial	Substantial
<b>Visual Quality</b>						
Decrease in Acres of Retention VQOs (%)	0	<1	3	2	2	<1
Decrease in Acres of Partial Retention VQO (%)	0	8	10	4	8	8
Decrease in Acres of Modification VQO (%)	0	5	7	3	7	5
Increase in Acres of Maximum Modification VQO (%)	0	41	76	34	67	41
Level of Change	None	Substantial	Substantial	Substantial	Substantial	Substantial
<b>Land Ownership and Use</b>						
Acres within a Selection Area	0	0	0	0	0	0
Roads in Selection Area	no	no	yes	yes	no	no
Acres within Private Land	0	0	0	0	0	0
Roads in Private Land	no	no	no	no	no	no
<b>Cultural Resources</b>						
Impacts to Known Cultural Resources	no	no	no	no	no	no
<b>Socioeconomics</b>						
Employment (number of jobs)	0	290	478	299	509	359
Employee compensation (millions \$)	0	10.23	16.88	10.29	17.97	12.51
Contribution to Gross Regional Product (millions \$)	0	15.53	25.61	15.78	27.28	19.05

## Summary

Table S-8 (continued)

### Comparison of Environmental Consequences

Environmental Consequence	Alternative					
	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>
<b>Subsistence</b>						
Significant Possibility of a Significant Restriction						
Deer	yes	yes	yes	yes	yes	yes
Furbearers	no	no	no	no	no	no
Fish and Shellfish	no	yes	yes	yes	yes	no
Marine Mammals	no	no	no	no	no	no
Brown Bear	no	no	no	no	no	no

<sup>1</sup> Rafting is presently occurring in Poison Cove and may occur in Ushk Bay independent of proposed harvesting within the Project Area.







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